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Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

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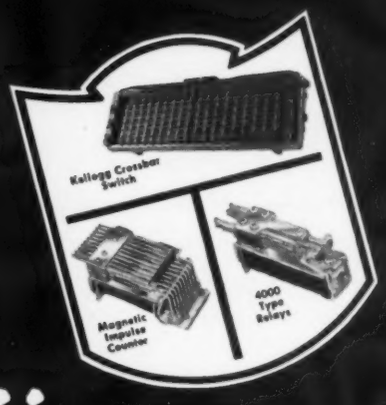

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FLASHES AND PLUGS

UNITED FRONT. The announcement that Russia, too, has H-bombs, may have straightened out one Waco, Tex., thief.

One night the thief broke into the county Civil Defense headquarters and stole the telephone, leaving the CD center seriously handicapped.

Next day came the announcement of the Russian H-bomb.

The very next morning the stolen telephone was found at the door of the CD headquarters.

• • •

A PLAN BY GRAN. Mike, five, soon to be six, was with his parents visiting grandma. Father said to Mike, "Tell granny when your birthday is.

Mike clammed up. He was a shy child and didn't like to be shown off. Coaxing merely drove him deeper into his shell. Yet back in his mind was the disturbing thought that a kid doesn't get any present if folks don't know when he's having a birthday.

The thought almost conquered his reticence. He opened his mouth, but tears came before talk, and the family went home, leaving grandma haunted by the puckered-up face peering out of the back window of the car.

Sometimes, as people grow older and are away from the actual wear and tear of raising the kids, they understand them better. Grandma sat by the telephone, allowing her visitors time to get home. Then she dialed the number and asked for Mike.

Mike thawed out over the telephone. He was chatty and informative for a spell.

Then he kissed the transmitter and hung up, never knowing that grandma didn't get that kiss direct.

• • •

UNDER COVER. Telephone installers and repairmen frequently find themselves performing to a gallery of bright young eyes. It's rather flattering. Men have been known to take extra flourishes with the screwdriver just to add drama to the job.

We've been told there was one installer, who, in arranging his "props" for a home installation, found himself an object of absorbing interest to the subscriber's four-year-old daughter.

He smiled upon her in indulgent fashion and started to work. She disappeared, returning a moment later to hand him a glass of water. While he sipped the cool liquid, she fetched a stool for him to sit on.

"Hm-m-m," reflected the repairman, "this is how a man ought to be treated. I wish my own kids could see this."

The girl squatted Indian fashion beside him, getting her nose as close as possible to his busy screwdriver.

When he finished the job and reached for the cover of the bell box, the ulterior motive came out. "Please," she said, "while you got the telephone open, kin I see the operators?"

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ABC of the Telephone

By FRANK E. LEE

THE PRIMARY function of an operating telephone company is to provide good telephone service. This statement has appeared in print many times before and is well known to practically anyone in the industry. It is repeated here only for the reason that occasionally there is a need to realign sights as to the objectives of a telephone company.

This article on routine schedules, as they apply to central office equipment, presents a logical spot to once again mention that central office equipment is used, basically, to give service to the subscribers. It is to stand ready to give service 24 hours a day, 365 days a year, plus an extra day on leap year, and in most cases it does just that. If the equipment can do this job with a minimum of maintenance, so much the better. Less maintenance means less operating cost, a healthier profit situation and lower rates to the public. All of these benefits are worth the effort, ingenuity, and skill that go into the task of cutting maintenance costs.

How do routine schedules fit into this picture?

The first point to consider in answering this question is, what constitutes a routine? A routine is a task that is performed at regular intervals in a definite prescribed pattern.

In the telephone central office there are hundreds of different units of equipment or apparatus. Many of these units are made up of relays, wires, moving parts, and similar smaller parts. These parts are subject to wear and a certain amount of deterioration is to be expected with age. Obviously, the only way to counteract the wear of time and usage is to replace worn parts, clean, readjust, and realign the various parts of a given unit.

The next question that arises is how often should these routine repairs be performed? This again involves another concept of telephone service—"Uninterrupted Service." It would be ideal if uninterrupted service could be given every subscriber at all times. However, the maintenance costs would be enormous, and thus another factor enters the picture—cost of maintenance.

A few short years ago, routine maintenance operations were scheduled on the basis of an estimate of when they would be required. A rigid schedule of maintenance was established for each equipment unit. Some of the schedules were set up on a yearly basis, some on half yearly, quarterly, monthly, and even on a weekly basis. Many exchanges still operate on similar maintenance schedules.

PART 65. CENTRAL OFFICE MAINTENANCE — ROUTINE SCHEDULES. The preceding article in this series appeared in the June 13 issue, page 13.

Without question these rigid routine schedules cost a lot of money. On the basis of studies in progress in many central offices for some time, these rigid schedules, generally, can be lengthened, eliminated, or scheduled on a "when and as needed" basis. This approach makes a lot of good common sense as it more or less gears routine maintenance to actual needs, and constitutes a "tailor-made" maintenance.

Before delving further into the methods used to determine a satisfactory routine maintenance schedule, it was found in these studies that from this standpoint no two offices are exactly alike. This means that because a particular routine maintenance frequency is right for one central office is no assurance that the same frequency is right for another central office. There are too many variable factors involved, as:

(1) Age of equipment.
(2) Subscriber calling rate.
(3) Types of subscribers served.
(4) Condition of the central office building.
(5) Use of air cleaning equipment.
(6) Over-all housekeeping procedures.
(7) Average humidity for the area.

Thus the most effective routine maintenance plan is geared to the needs of the individual central office. This does not mean that the schedules used in one office will be radically different from those used in another. However, a certain routine in office "A" may be required every four months, and in office "B" the same routine may be scheduled on a six-month basis. In others a slightly different timing may be more appropriate.

Although certain schedules may vary from one office to another, there are certain routines that should follow practically the same pattern in all offices. This can best be shown by discussing briefly the various routine scheduling systems.

Methods of Scheduling Routines

In general, the various routine scheduling systems that may be used in a central office maintenance program are as follows:

(1) Periodic routines.
(2) As required routines.
(3) Continuous routines.
(4) Productive routines.
(5) Insurance routines.
(6) Cleaning routines.

Periodic Routines—Periodic routines are those scheduled to be performed at definite intervals, as weekly, monthly, quarterly or yearly intervals. These are often called "must" or "fixed schedule"

routines. Typical of this group of periodic routines are:

(1) **Lubrication Routines.** No matter what type of central office is involved, there will always be certain continuously moving parts that require cleaning and lubrication just as does an automobile or piece of machine shop equipment. Included in this list would be equipment such as motor driven generators, mechanically operated timing devices, position clocks, key sets, air compressors, sump pumps, magnetic counters, rotary switches, selectors, etc.

From this list it will be noted that, with few exceptions, the equipment requiring lubrication is subjected to approximately the same amount of wear or use in one office as compared with another of the same size, without regard to traffic load, call holding time, and the other factors previously mentioned.

Thus, to insure long life and trouble-free operation it is well to care for lubrication routines on a scheduled basis in accordance with the manufacturer's instructions.

(2) **Battery Routines.** When given good maintenance, the battery plant in the central office seldom if ever fails completely. In a similar manner, about the only time a central office battery system is the direct cause of a subscriber report is when the system is badly discharged, a result of a charging equipment failure, or a prolonged or severe traffic overload. As a rule, on a day-to-day basis central office maintenance people have little occasion to visit or check the battery plant. Thus, the battery plant should be included in the periodic routine schedule. Typical tests and inspections included are:

(a) Drain tests, usually scheduled on a semi-annual basis.
(b) Individual cell and voltage readings.
(c) Level of electrolyte in each cell.
(d) Pilot cell gravity.
(e) Trip battery voltage check.
(f) Counter voltage (CEMF) cell check.
(g) Emergency power plant operation.

(3) **Switchboard Routines.** In this group are certain inspections of equipment which may not be reported by the traffic forces until a service failure occurs. Because of the traffic volume handled during peak periods, it is believed that these routines should be set up on a periodic basis so that any trouble can be cared for as preventive maintenance instead of as corrective maintenance. The routines involved in this category are:

(a) Inspect, test, and repair operator telephone sets.
(b) Cord repairs.
(c) Check and reset position clocks.
(d) Inspect and repair operator chairs.

(4) **Emergency Equipment Routines.** The actual time when the use of emergency equipment will be required, of course, cannot be determined. Whenever the need should occur, one thing is certain—the equipment should be ready for immediate use. The answer is periodic routine and operation tests of the equipment in this group such as:

(a) Emergency power plant.
(b) Emergency lighting equipment.
(c) Emergency alarm circuits.
(d) Sump pump alarms.
(e) Manhole cover alarms.
(f) Door alarms.

(5) **Tool and Ladder Routines.** Periodic routines of tools and ladders help to insure that they will be safe to use and will be available when the need arises. In general, these routines include inspection to be sure that the hand tools and other equipment are in a safe and serviceable condition. Whenever replacement of parts or other repairs are required, this work is performed as part of the routine assignment. Included in this category of periodic routines are:

(a) Inspection of rubber gloves.
(b) Inventory and inspection of hand tools.
(c) Inspect and repair electric soldering irons.
(d) Check all stationary and rolling ladders.
(e) Review file of circuit drawings and equipment maintenance instructions.

Generally this review of drawings and maintenance instructions is done on a yearly basis. This insures that all necessary prints and related materials are in the files and suitable for use. If any prints are missing or damaged, replacements should be secured.

(6) **Safety Routines.** The observance of safe working practices is a constant objective every day in the central office. However, there are certain features of the safety program that can best be cared for on a routine basis. The following periodic routines are typical examples:

(a) Inspection of rubber gloves.
(b) Check of first aid cabinet supplies.
(c) Fire drill.
(d) Test fire escapes.
(e) Inspect fire fighting equipment.
(f) Disposal of junk material.
(g) Check of lighting equipment.

In many instances, the replacement of burned out bulbs or fluorescent tubes is cared for as needed. In some locations, such as in equipment frame aisles, one bulb or a single tube in a group may be burned out without being replaced immediately. In a larger central office this may be found in most of the equipment aisles with a resultant lowering of the efficiency of the lighting system, often as much as 25 per cent. The answer is to be found in a periodic routine check.

The foregoing examples show how certain maintenance jobs can be handled more efficiently by periodic routines than on a day-to-day basis.

As Required Routines

As required routines are those routines that are performed when the analysis of trouble reports indicate they are necessary. It will be found in most instances that the equipment used in the actual handling of subscriber calls can be routined on this basis.

First of all, this method of setting up a routine assumes that there may be an occasional case of trouble or a one-time failure in any unit of central office apparatus. For example, a piece of lint or dirt may come to rest on a relay contact and on the next operation of the relay, the dirt on the one contact may prevent that one part of the entire circuit from functioning properly. This may mutilate one call or cause it to be misdirected.

Relay contacts usually are adjusted to provide a small degree of "follow" after the contacts make. This causes the two contacts to press firmly together and creates a sliding or wiping action at the contact points. This wiping action could clear a small speck of dirt or lint from the contact surfaces. Thus, if one call should be mutilated, the next call may be satisfactorily completed.

Whether or not a telephone company ever knows about these equipment failures depends to a large extent on the cross-sectional make-up of its subscribers. Some subscribers will tolerate considerable inconvenience before they will originate a trouble report. Other subscribers will make an immediate report of even the slightest amount of trouble encountered in any given call. Therefore, a knowledge of subscriber reporting habits is essential in establishing a reliable basis for as required routines.

Analysis of "found trouble," "test and found O.K. reports," "dial tone delay registrations" and similar equipment trouble measurement items are the basis of as required routines. These items are recorded on a frame-by-frame basis or by equipment groups. In this way an average results expectancy can be established for each frame in the central office. Whenever any one frame or any one item shows a marked in-

crease in "found troubles" or in "reports found O.K.," that unit should be considered for suitable preventive maintenance routine.

An analysis stroke sheet, similar to that illustrated in *Fig. 1*, provides a convenient means of gathering the data required for this type of study. The equipment groups or frames are entered in the left-hand column. Trouble measurement items can be stroked under the proper month in the appropriate column to the right. An analysis sheet covering a three-month period has been found quite convenient to use. Such a period provides a representative time over which logical comparisons can be made. An analysis sheet covering a longer period of time may prove cumbersome to use and because of the mass of data accumulated, may prove misleading. Experience also has shown that at times it is well to terminate one stroke analysis sheet and start another to see if current results are in agreement with those reflected on a chart covering a longer period.

"Found troubles," in this instance, are those cases in which actual trouble was found in the central office equipment. The actual trouble need not be shown on the chart. Instead the trouble ticket may be placed in a file arranged by equipment frame designation number.

It will be noted in *Fig. 1* that Frame 207 was considerably higher in "found trouble" and "test and found O.K." reports during the first two months shown. A review of the "found trouble" tickets for this frame shows that most of the trouble was caused by dirty relay contacts. On this basis it is logical to assume that dirt conditions contributed to the "test and found O.K." reports for the frame.

At the end of the second month, a routine order was issued to clean Frame 207, using the pressure blowing method. This job was cared for promptly. The results were good because there were no trouble measurement items scored against this frame for the third month of the analysis period.

The second case circled on the chart in *Fig. 1* concerns Frame 204. The trouble measurement items stroked against this frame were considerably above average for the last two months of the analysis period. A review of the "found trouble" tickets revealed the primary cause of trouble was release failure of one of the supervisory relays used in each circuit. To correct the condition, magnetic separators were installed over the relay pole pieces. The routine order issued for this frame covered placing magnetic separators and adjusting the supervisory relays on the frame which had not been cared for while clearing "found trouble" conditions.

ANALYSIS OF EQUIPMENT FRAME TROUBLE

FRAME	FOUND TROUBLE			TEST AND FOUND OK ORIGINATING			TEST AND FOUND OK TERMINATING		
	FIRST MONTH	SECOND MONTH	THIRD MONTH	FIRST MONTH	SECOND MONTH	THIRD MONTH	FIRST MONTH	SECOND MONTH	THIRD MONTH
200	I		I		II		I		
201		I						I	
202					I				I
203	I				I		I		
204	I	II	IIII		IIII	IIII	I	III	IIII
205		II					I	I	I
206								II	
207	III	IIII		IIII	III		II	I	
208	I		I		I			II	I
209		II		I	I	I		I	II

Fig. 1

Over-all economies resulted from installing the necessary separators on a wholesale basis on Frame 204. The analysis study revealed there was no need, at present, to place separators on the supervisory relays on any of the other frames. This condition is not unusual as there usually is a difference in the calling rate, the holding time, etc., between the various equipment frames in any central office. The important fact is that the as required method of scheduling equipment routines resulted in a minimum of expenditure of maintenance effort in those places where it would do the most good. In any business, that is a combination that is hard to beat.

Continuous Routine

Some central offices are equipped with automatic test frames to facilitate testing of trunks, automatic switching units, and other apparatus. Various tests can be set up on these frames, and all of the circuits in the central office will be tested in sequence when they are idle and not being used on a subscriber call. When a trouble condition is encountered, the automatic frame will stop, signal a maintenance man, and indicate the progress of the test call at the time the trouble was encountered. In most instances, a given number of cycles, using a pre-arranged group of test calls, is set up for a particular period, such as a month. Even though the cycle is completed in 29 days, the routine is considered as continuous.

During periods of heavy traffic, continuous routines should be recessed, by stopping the automatic frames, to make all of the equipment available for subscriber calls.

Productive Routines

Productive routines are established on a formula that allocates a certain amount of routine time for each trouble found in a given equipment unit. For example, two hours routine time may be set up for each trouble found in a frame. If 10 cases of trouble were found in the frame in a given period, 20 hours for routine time would be set aside for the frame. This arrangement may defeat its own purpose. It provides a way of applying preventive maintenance effort where it is needed, but there is little assurance that the time allotted will be too much, too little, or just right for the necessary routine maintenance activity. For this reason it appears that the "as required" basis is a more universally adaptable method of scheduling the maintenance routines.

Insurance Routines

In any central office there generally are certain key items of equipment, the failure of which would disrupt

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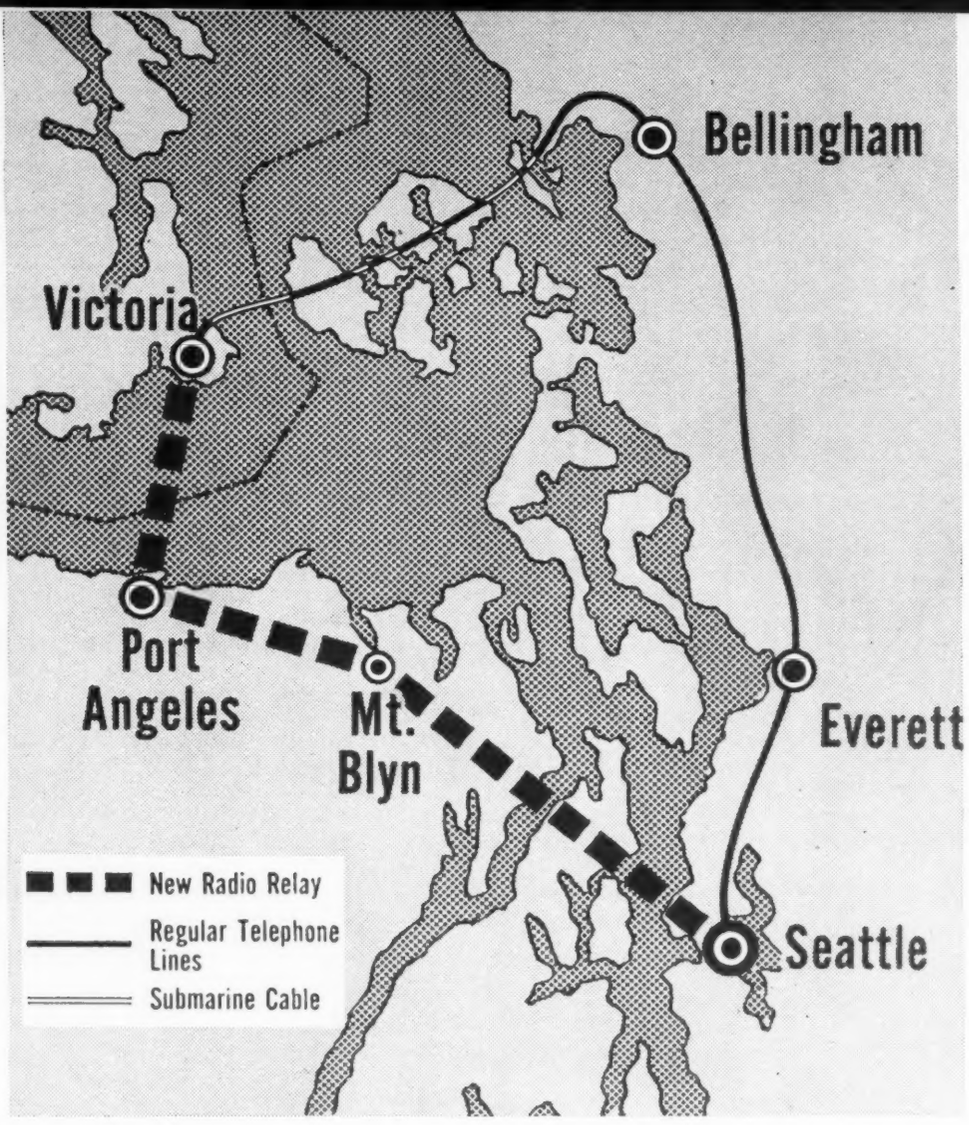

Radio Links U.S., Canada

By ROY E. KISTLER
Transmission Engineer
Pacific Telephone & Telegraph Co.

FOR MANY YEARS the service from the United States to Victoria, in British Columbia, was over a circuitous route via Bellingham, Wash. The circuits were carried from Seattle to Everett in underground cable and from Everett to Bellingham on an open wire carrier lead. Between Bellingham and Victoria the route was open wire with intermediate submarine cables as it followed a route from island to island.

The last and longest submarine cable in Haro Strait between San Juan Island in the United States and Vancouver Island in Canada, a distance of 8.2 miles, was owned jointly by the Pacific Telephone & Telegraph Co. and the British Columbia Telephone Co. The water, which reaches a depth of 900 feet, is very swift and the armour becomes badly corroded. This rapid corrosion and the difficulty of picking up and laying cable in the deep and fast channel has resulted in relatively short life for this cable. The original cable was replaced in 1928 and again in 1940. When it was repaired and relaid in 1950 the condition of the armour was such that it was concluded the cable could not be repaired again.

During 1950, studies and cost estimates were made to determine the best plan for replacing the cable when it failed, which was estimated would occur in two to four years. These plans included various routes in addition to the replacement of the cable route. Preliminary cost studies indicated that the radio route would be more economical, so it was agreed to develop a radio route. Various plans were studied. One plan was a single link radio between Victoria and Port Angeles with circuits extended to Port Blakely, Wash., over open wire carrier and from there to Seattle by submarine cable. Another plan was a two-link radio path from Seattle to Victoria with a repeater on Mt. Blyn. A third plan was a three-link radio path from Seattle to Mt. Blyn to Port Angeles to Victoria with dropping equipment at Port Angeles. The latter plan was adopted as it offered a means of diversification of circuits.

During 1951, the engineers of both companies studied the problem further and reached agreement on the type of system to use. The British Columbia Telephone Co. had had considerable experience with radio circuits from its mainland to Vancouver Island, having over-water hops similar to that encountered from our mainland to Victoria. It desired to use frequencies as low as 250 mc. The nearest frequency available to us was in the 450-mc range. It was agreed that the Lenkurt 72AI radio equipped with a Lenkurt 33C carrier would satisfactorily meet the requirements.

In November, 1951, the Pacific Telephone & Telegraph Co. authorized funds for the construction of a radio route from Seattle to Victoria. This enabled the engineers of the two companies to make the necessary radio tests, to agree upon selection of sites and frequencies and to proceed with the engineering of the equipment. The British Columbia Telephone Co. formally agreed in July, 1951, to proceed with the engineering of the radio system and agreed as to the type of system in March, 1952.

The first problem to be solved was the question of frequencies. It was necessary for the Pacific company to secure approval from the Federal Communications Commission and for The British Columbia Telephone Co. to secure approval from the Canadian Department of Transport. The lowest frequencies available in the United States for our use are the 450-mc band from 454 to 455 and 459 to 460 mc. FCC authority for the use of a frequency in this band for this international system is subject to no harmful interference or degradation of service being caused to stations now or hereafter licensed in the Domestic Public Land Mobile Radio Service.

From Seattle to Port Angeles being entirely in U. S. territory, it was necessary to use the 900-mc band from 890 to 940 mc.

The application was made to the FCC for permission to use 890.5, 892.5, 921.5 and 923.5 mc from Seattle to Port Angeles and to use 459.25 mc from Port Angeles toward Victoria on an experimental basis. A construction permit was issued by the FCC on Mar. 18, 1953. At the same time the British Columbia Telephone Co. applied for and secured approval from the Department of Transport to use a frequency of 454.25 mc from Victoria toward Port Angeles.

With the land line circuits the meeting point called Victoria Transfer was the international boundary which is located about one-third of the distance from the United States shore end of the Haro Strait submarine cable. The Pacific company rates were computed to that point and the British Columbia Telephone Co. added to it its other line charge. The same point of connection, the international boundary, is being retained for toll rate purposes. Settlement between the two companies with regard to total costs and charges of the radio equipment including intermediate relay equipment is still to be resolved.

Each company owns its equipment and is responsible for the operation and maintenance of its part of the system.

Agreement on the Port Angeles-Victoria route was a mutual problem. The towns of Victoria and Port Angeles are within sight of each other over the Straits of Juan De Fuca. It was

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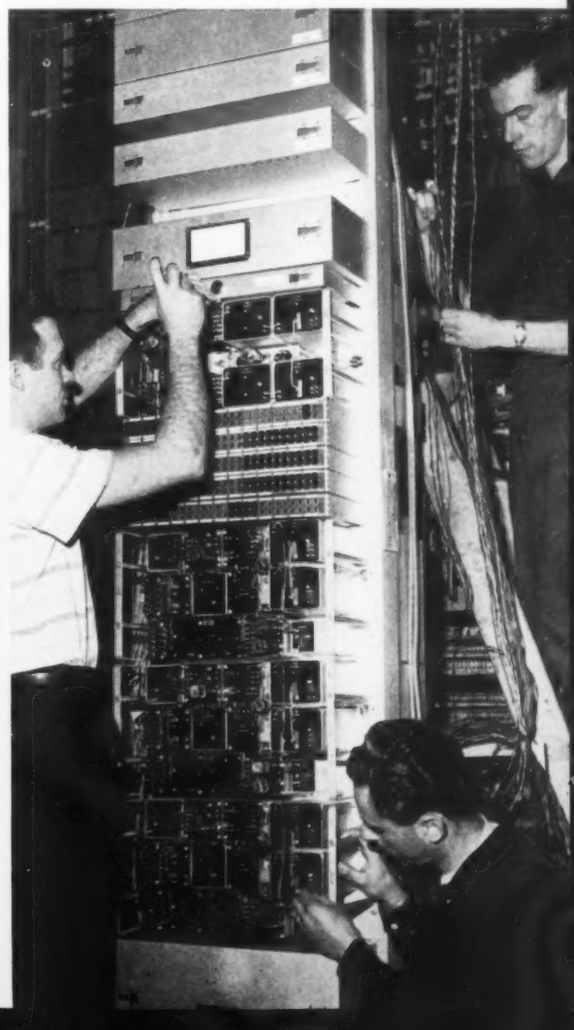
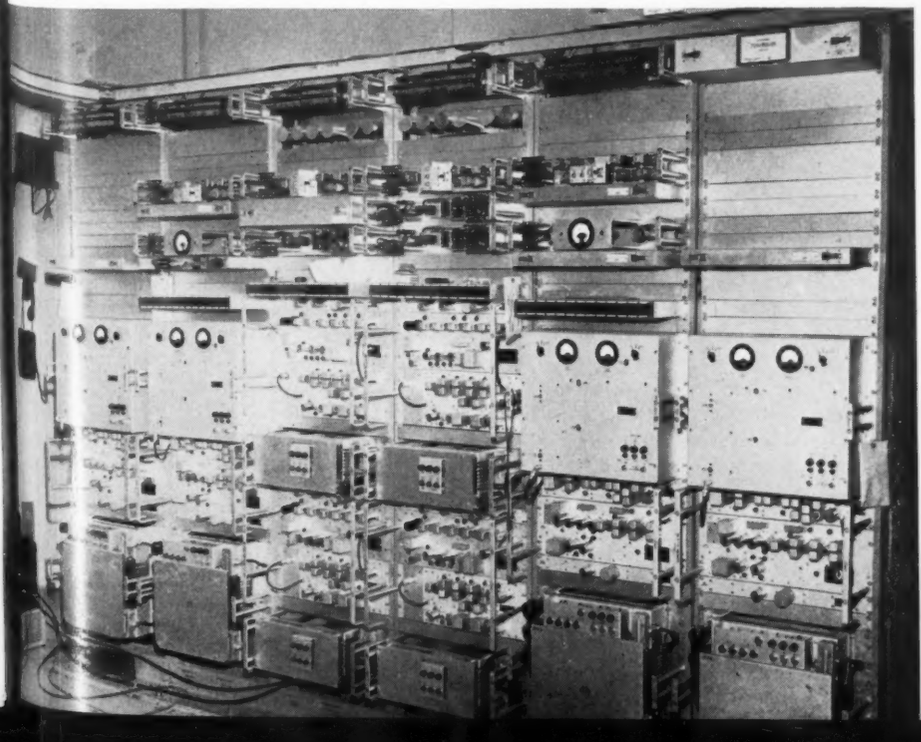
ABOVE: Parabolic antennas at Mt. Blyn are mounted on triangular pole structure.

BELOW: In Victoria, these men are shown installing channelizing equipment which will make system work.



A view of the Lenkurt equipment installed at the Mt. Blyn repeater point.



MARK R. SULLIVAN

When Telephone Officials Turn into Professors

*By JAMES H. COLLINS**

Here is an account of what happened when the University of California invited Mark R. Sullivan, president of the Pacific Telephone & Telegraph Co., and other company executives to come and lecture about their problems. The author recommends the experience to educators and utility men elsewhere. (Reprinted from *Public Utilities Fortnightly.*)

SUPPOSE that you, as headman of your company, were invited to be a guest professor at your state university, along with your department heads.

Among other things, they teach business administration at the university. You and your vice presidents are invited by the real professors to come and lecture about your business, the way you run it, how you finance it, sell gas, electricity, telephone service, keep the books, get around roadblocks, plan for the future.

In a way, it is an invitation to put on a cap with a tassel and tell the young generation how very good you are.

But getting up a college lecture on your everyday work is going to be labor in itself, taking a week of Saturday afternoons. And the young generations—huh! Tomorrow these students may be working for you, with eyes on your job!

It makes you think.

First of all, what can you lecture about—what do these students want to know about the utility business?

Who is going to get up the lectures —librarians, public relations fellows, statisticians, ghost writers?

Each lecture will be followed by a question period—how about embarrassing questions, personal questions, heckling, standing up to be shot at for the good of the cause?

Suppose you decide to do it, and drive your top brass into the project with a bullwhip—will your company get anything out of it, tangible results justifying the expenditure of time and money?

Last spring such an academic invitation came to Pacific Telephone executives, from the University of California's School of Business Administration. With eight of his department heads, Mark R. Sullivan, president of the company, delivered 10 lectures on the campus at Berkeley, and afterwards stood up to the quizzing.

It was an experience with many satisfactions and rewards, and even surprises. There were no bad effects. The idea can be recommended to educators and utility brass elsewhere. Any company can get a lot out of it — values that were one of the surprises.

"What can we lecture about?" the utility fellows asked Roy W. Jastram, associate dean of the business administration school, who had the project in charge for the university, and was the catalyst and able handler for it all.

"About your problems and how you meet them," he replied. "We want top management men in a company like Pacific Telephone to come here in person, explaining at firsthand their operations, policies, and problems, and answering student questions."

This idea first took form at the university in 1951, when executives of Cluett-Peabody flew out to Berkeley for a series of weekly lectures. The following year Standard Oil of California executives delivered similar lectures. A great deal was learned about what is of most value to students, and about background stuff that clutters up lectures and is best dealt with in other ways.

Large companies have a complexity that is pictured in their authority charts. It is necessary for students to understand this background, but explaining it in a lecture is cumbersome and interferes with the main purpose, which is to tell students what you are up against, and what you did then.

Business administration is taught mostly in cases. The John J. Jones Corp. is slipping, after 50 years, earnings are off, young competition is giving trouble—does the company need new management blood? More promotion? To build up weak territories? To concentrate on its strong territories? To spend money researching new products?

Students go into such a case, and mostly from books, plus some personal investigation of other companies, develop advice for the Jones corporation directors.

Go out and round up a bunch of utility management fellows, and have them bring their cases to the class, and answer questions, and add the reality of personal contacts, and you have some splendid teaching.

Pacific Telephone is big enough—renders Bell service in California, northern Idaho, Oregon, and Washington, did around $535,000,000 last year, has some 77,000 employes, a thousand central offices, handles about six billion calls a year, over five million telephones.

For this background the company put together a basic textbook, covering the organization, with biographies of its lecturers, charts and tables, the 1952 annual report, samples of advertising, employe literature—altogether a couple of pounds of data, given each student for reference as the lectures went on.

*Professional writer of business articles, now resident in Hollywood, California.

One of the first good deeds performed by this background book was ice breaking.

In shaping their lectures, the telephone men had several meetings with university professors, and these discussions were extremely helpful to everybody. On the day of each lecture the guest "prof" met a group of the faculty at lunch, for the purpose of eliminating stage fright, putting the victim of the day at ease.

The first of these lunches found Mark Sullivan headed for the guillotine, and with the best feeling in the world, ice was forming. Sullivan went to work at 16, so was not familiar with campuses, and while his other guest "profs" had been to college, that was as students, and this rubbing elbows with the faculty was different.

On the cover of the textbook appeared the picture of a telephone operator with her headset, plug, and pad.

"Mr. Sullivan," one of the faculty asked, "how many girls do you have working for you who are as pretty as the girl on this cover?"

Sullivan is good on the rebound.

"We have 48,948 women on our payroll," he replied, "and in my eyes they are all as beautiful as the one on the cover."

Knowing what a job it is to recruit girl power for the telephone company, that answered the $64 question. On one of the lavishly sponsored radio quiz programs it would undoubtedly have won an all-expense trip for Sullivan and wife—say to Florida.

Pacific Telephone is well staffed for information, what with the reports, statistics, and so on needed for regulatory bodies, financing, and the like, and the information fellows rallied to the aid of the vice presidents getting up lectures.

But their services were not utilized. There was no ghosting in these papers. In fact, the vice presidents rather jealously guarded their freedom of academic speech.

"If we can help you in any way with your lecture . . ." proffered the information men.

"You keep out of this!" was the v-p attitude.

Mr. Sullivan's lecture was representative. He started in by saying that the way to deal with a big company was to approach it by piece-parts. Then he enumerated parts such as operations, traffic, engineering, research, accounting, finance, law, and so on, and said that executives from these different departments would explain their problems, and the handling thereof.

Which might suggest the question, "If the president of the company has all these able assistants, what is there left for him to do?" The answer to that was, he tries to keep them all working smoothly, stepping in only when there is some situation where the brass in his toe may give him an edge over the regular man. He needn't be as good as the regular man—it's the brass that delivers the kick that clears an obstruction.

While he did not venture to advise how a man could become president of such a corporation, he thought the Old Man's chief problem was the selection of people, and keeping them busy, happily. He talked some about the money problems of the headman, and touched upon the current problem of most utility presidents, that of getting rate adjustments in keeping with inflationary costs.

This rate problem kept creeping in, creeping into practically all the lectures, and the guest professors were worried about it. It seemed as though even a humorous story would wind up in rates. Sullivan had a vivid comparison between the value of a hundred shares of Pacific Telephone stock in 1940, and in 1952. By last year the 100-share-stockholder had lost $1,050 in market value, his shares shouldered $548 more tax load, his dividends brought the same number of dollars, but with only a little more than half the buying power, and if he had invested in other securities from the Dow-Jones averages, he would be twice as well off.

"We keep coming back to this financial problem—do you think we are obsessed by it?" asked the guest professors, preparing their papers.

And faculty professors said, "No—most of your management problems these days seem to stem from this situation, and almost before they know it, our students will be out dealing with similar problems."

If the utility executive is going to be rounded up for college lecturing, a word about stage fright may be helpful. Like fear in war, everybody has it, and most individuals get over it as soon as they become absorbed in their work. The first minute and a half before an audience is hardest, then the speaker gets into his text, and the audience is forgotten.

One of the guest professors was so apprehensive that finally he said, "I can't lecture for an hour, but I will get up there and answer questions."

It was agreed that this was one of the best features of the series. S .W. Campbell, comptroller, sketched his work, billing customers more than 40 million times a year, in a department with more than 4,000 employes. He

(Please turn to page 35)

REA Approves Loan for Georgia Company

The Rural Electrification Administration approved one telephone loan during the week of Aug. 17 to 21. Details of the loan follow:

Pineland Telephone Cooperative, Swainsboro, Ga., $489,000, third loan to this borrower. Approved on Aug. 21.

These loan funds will be used for the acquiring, rehabilitation, and expansion of the telephone properties serving Metter, Ga., and surrounding rural areas. These facilities, to be acquired from Southeastern Telephone Co., Tallahassee, Fla., are now furnishing magneto service to 257 subscribers over 60 miles of line.

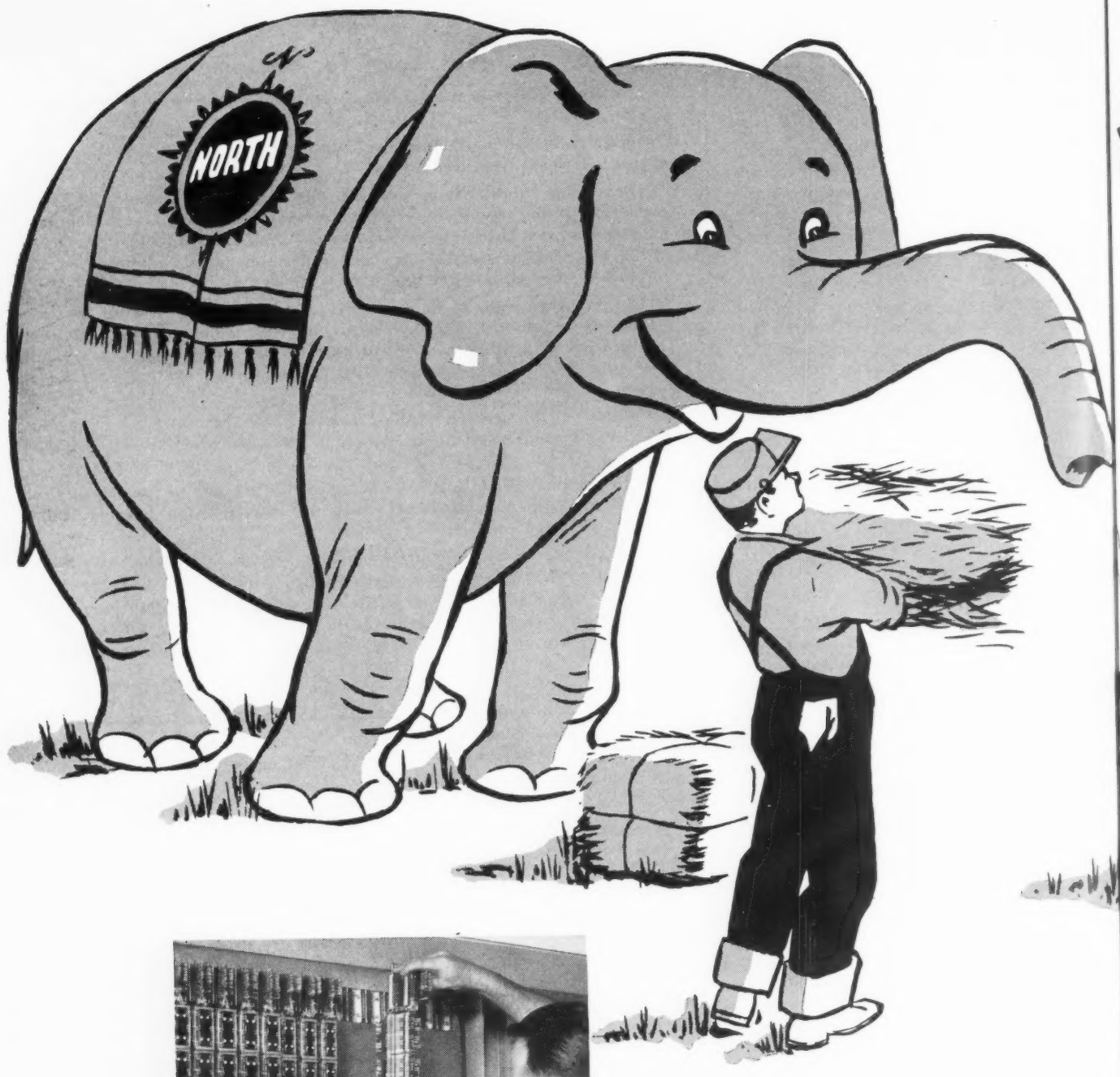
The borrower plans to construct new dial central offices at Metter and Cobbtown, rebuild 20 miles of the acquired line, build 95 miles of new line and other facilities to serve the existing subscribers and 280 families now without telephones. Present plans call for service without toll charge between the two exchange areas.

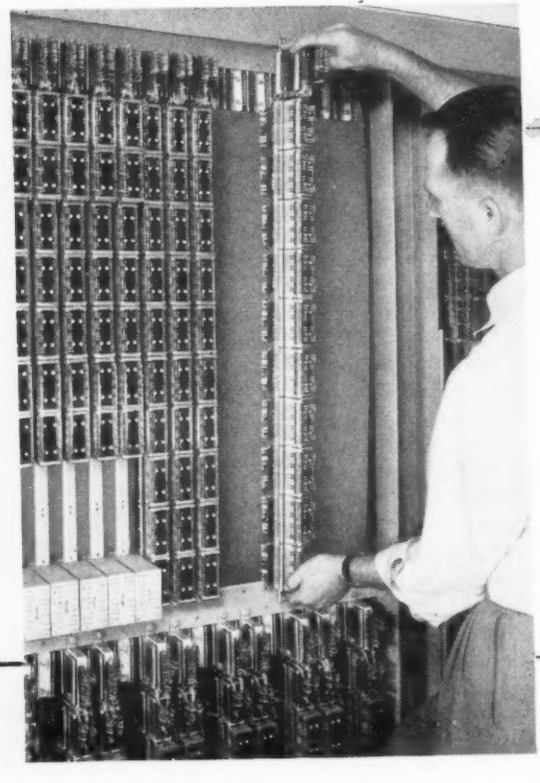
Completed, this portion of the Pineland Telephone Cooperative system will provide modern telephone service to 807 subscribers over 143 miles of line.

With the three REA loans, the borrower will be able to furnish service to 2,285 subscribers in Emanuel, Candler, Burke, Johnson, Laurens, Tattnall and Treutlen counties.

Dial offices for the whole system will be located at Adrian, Lexcy-Stillmore, Twin City, Midville, Kite, Metter, and Cobbtown.

The Adrian, Lexcy-Stillmore, Twin City and Midville offices were cut over to dial operation within the last month and the Kite office was to have been cut over during the first half of August. The completed system will consist of 697 miles of line.


NORTH



NORTH

Adequate "Trunking"

...for any load

Time was when an exchange with 10% trunking was adequate in almost any community to handle any traffic its subscribers would throw at it, barring extreme emergencies. But communities change. Their pulses may quicken with new business to the point where a 10% system gets high blood pressure for sure, unless it is designed for growth. Progressive engineering keeps North "All-Relay" in step with changing characteristics of the nation's voice. Simplified methods of adding linkage enable you to stretch line equipment to its maximum usefulness. Without having to install elephantine equipment to handle peanut traffic, you still can reach out for the big stuff —if and when: Let a North Engineer show you why

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THE PLANT MAN'S Notebook

by Ray Blain, Technical Editor

BACK IN THE OLD DAYS, we were led to believe that the only telephone men who did not go to heaven when they passed on were the ones who did not solder all connections thoroughly.

Then, recently, the Bell Laboratories and the Western Electric Co.'s engineers developed a pistol-like tool to be used in the making of electrical connections without the use of solder.

Five years of intensive engineering and factory work, we are told, indicates that these solderless connections are neater, surer, faster to make, and less costly than the old and long-used type made by hand with pliers and soldered carefully with an iron.

The key to this new development is the special tool that resembles a small electric drill of the pistol type. It is fitted with a barrel, smaller in diameter than a pencil, housing an inner spindle that rotates at a rapid rate when the trigger is pulled. The spindle has a small opening in its rim into which the end of a wire, after the insulation has been removed, can be inserted, and a center hole to take the terminal.

With a wire in place, and the center of the tool over a terminal, the trigger is squeezed and in a split second the wire is coiled snugly around the terminal.

We are informed that the secret of this process is that the terminal has sharp edges so that the metals of the wire and terminal bite into each other under the wrapping. The result is a mechanically secure and electrically positive connection with an estimated trouble-free life of at least 40 years. Six tight turns around a rectangular terminal are the usual number, making 24 metal-to-metal contacts between wire and terminal.

It is claimed that the pressure at the points of contact is so great that, if pulled, the wire will break before the turns will unwind or strip off.

When necessary, however, by the use of a special tool resembling a pair of pliers with a peculiar tip, the wrapped connection can be removed by hand more cleanly and quickly than a soldered connection.

Severe vibration and heat tests indicate that these connections are extremely stable. Other advantages for this type of connection are that there are no solder splashes and no wire ends to be clipped which might fall among the terminals and cause future trouble. Also all connections are uniform.

• • •

A recently developed lag screw anchor, it is claimed, has a holding power of 2 tons when properly installed in concrete. Made of cellulose plastic for use with $\frac{3}{8}$-inch, $\frac{7}{16}$-inch, and $\frac{1}{2}$-inch lag screws, or corresponding wood screws, these anchors are suitable for both indoor and outdoor use.

They can be used in any type material that can be drilled, and will withstand extremes in temperature, age, moisture, corrosion, shock and vibration, in addition to having good dielectric qualities.

The manufacturer states that as a screw is driven into the anchor, it cold flows into every crevice of the drilled hole, giving a permanent trouble-free mounting.

• • •

We have always been of the opinion that troublemen should be trained to be careful and thorough in their work. An accurate trouble record will indicate carelessness and, more important, will help eliminate repeat troubles which never improve the public relations of any telephone company.

For example, if a troubleman is careless in cleaning wire or does not make sure that it is properly wrapped around a binding post and then tightened securely, noise may develop at a later date and a second visit will be required.

It would have been much better as well as cheaper if a little more time and care had been exercised on the first trouble report so that the trouble would have been cleared and remained cleared for a reasonable period of time.

A prime case of carelessness was noted some months ago by the writer. A cable terminal cover had been left off all summer. This has been an exceptionally dry year, and for this reason probably very little trouble has been caused by such negligence. But, when the fall rains set in, leakage trouble will almost surely be experienced. At any rate, the carelessness of this troubleman is not doing the face plate and the drop wire connections on the terminal any good.

• • •

We note with considerable interest while traveling around the country that there is a general tendency toward dispersal in even the smaller villages. New shopping centers and various types of manufacturing activities, in many cases, are being built on the outskirts of these smaller communities. Perhaps this is due to the parking problems which exist even in the small towns.

However, this trend does increase the cost and operating expense of the average small telephone company, and it is believed that it should be reflected in the rates.

• • •

It has been said that you should:
Do more than exist—LIVE
Do more than touch—FEEL
Do more than look—OBSERVE
Do more than read—ABSORB
Do more than hear—LISTEN
Do more than listen—UNDERSTAND
Do more than think—PONDER
Do more than talk—SAY SOMETHING

• • •

We have had numerous reports from time to time of squirrels gnawing the sheath of lead-covered aerial cable, but it appears that the present trouble of the Pacific Telephone & Telegraph Co. in an Nuys, Calif., is a bit on the unusual side.

It is claimed that squirrels cost the company more than $30,000 last year in that area, and the end is not in

sight. Fifteen years ago, squirrels were almost unknown in the San Fernando Valley. Today, there are an estimated 20,000 to 30,000 of them.

It wasn't an invasion, but like "Topsy," the squirrels just grew. It seems that a patient at Sawtelle Veterans' Hospital kept six Texas red squirrels caged as pets. Then one day in the late 1930's, he decided to release them.

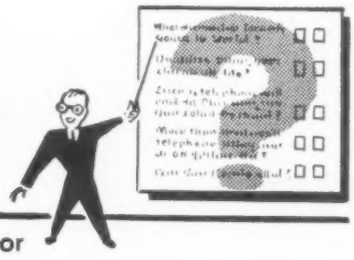
Freedom agreed with them and they started multiplying at a rate made famous by rabbits. The Valley's squirrel population is doubling every year, and nobody dares to guess when the saturation point will be reached. Forecasts for next year predict a population of 40,000 to 60,000.

The Pacific company estimates that every squirrel costs the company $1.00 per year in damage repairs.

Almost everything has been tried to reduce cable-gnawing. The cables have been coated with a special paint, but this has not worked.

The most successful anti-squirrel damage measure found to date appears to be a sheet metal tent. This tent-shaped strip of metal is easily installed on top of cables. Squirrels can't get a footing on this slippery surface.

PLANT MAN'S QUIZ



by RAY BLAIN, Technical Editor

Q. We are planning on rebuilding our rural lines and have not been able to decide whether we should use the outdoor weatherproof type of protector or the conventional type installed inside buildings. Can you advise us in this matter?

A. Both types, if properly installed and maintained, will prove satisfactory and perhaps the best plan would be to use some of both. When a satisfactory location cannot be found inside a building for the installation of a protector then the weatherproof outdoor type should be used by all means. A protector should never be installed in an attic, under a building or in a wet basement.

One important factor to consider in the use of the outdoor type protector is the fact that it is accessible to the troubleman at all times. This is an important feature on a rural line as protector trouble after a lightning storm may be cleared whether the customer is home or not.

• • •

Q. Will it be possible to weld a new contact on a relay spring, when the old contact has burned off, without removing and dissembling the relay?

A. A special tool with a spot welder arrangement has been developed for handling this operation, but it is expensive and requires a specially trained operator.

First, the old contact is cut off the spring with a special tool, and a new cross bar type contact is welded in place. The electrode that holds the new contact in place on the spring for welding is an accurate jig arrangement.

This special tool would never prove economical except perhaps in some of the larger exchanges. In the smaller exchanges, it would definitely prove more economical to replace relay springs when contacts become defective.

• • •

Q. Is it true that some paints will cause trouble if used on walls and ceilings of equipment rooms? How will we know what type of paint can be safely used in our exchange?

A. It is true that paints or varnishes containing turpentine should never be used in equipment rooms or equipment trouble may result.

Use linseed oil base paints in all cases and you will be safe.

• • •

Q. When a switchboard cord becomes frayed near the base of the plug, is there any objection to wrapping the frayed part with cord or thread to extend its service life?

A. We would not recommend this practice because when the cord is worn and frayed, there is every probability that the tinsel is broken and noise will result.

When cords are frayed near the plug, they should be rebutted or cut back. When rebutting cannot be used to correct the frayed condition, the cord should be replaced with a new one.

Q. When will an insulated joint be required in lead-covered aerial cable in the exchange distribution plant?

A. Insulated joints are not as commonly used as formerly; but they are used when necessary to break the electrical continuity of the cable sheath and to prevent the flow of foreign currents.

In some special cases, insulated joints are placed in cables where they enter a building. They are not generally used between aerial and underground at the present time.

• • •

Q. If water enters a desiccant-filled splice in paper-insulated cable will there be any danger of its causing damage to the insulation?

A. We are reliably informed that approved desiccants will neither corrode the conductors nor damage the insulation even though the splice may be saturated with water for long periods of time.

• • •

Q. Will it be possible to improve transmission on extra-long loops by connecting two pairs in parallel?

A. This is always a wasteful method and, in general, should be discouraged.

Where supervision, and not transmission, is the controlling factor, the use of parallel pairs may be justified in a few isolated and special cases.

However, from a transmission viewpoint, the losses resulting from the use of non-loaded pairs in parallel are generally somewhat higher than those resulting from a single pair.

The possible disadvantages of crosstalk must also be considered when parallel cable pairs are used.

• • •

Q. We find it extremely difficult to obtain lead sleeves 3 feet and longer for use in making cable repairs. Can you give us any assistance in this matter?

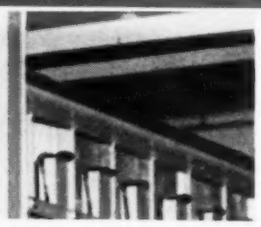
A. Sleeves of this length generally must be specially ordered and at an increased cost.

The use of long split sleeves is usually discouraged as they are expensive to install and may themselves cause trouble.

If a cable is damaged for a distance of 3 feet or more, it generally proves more desirable to use two sleeves of normal length and cut in a short section of new cable.

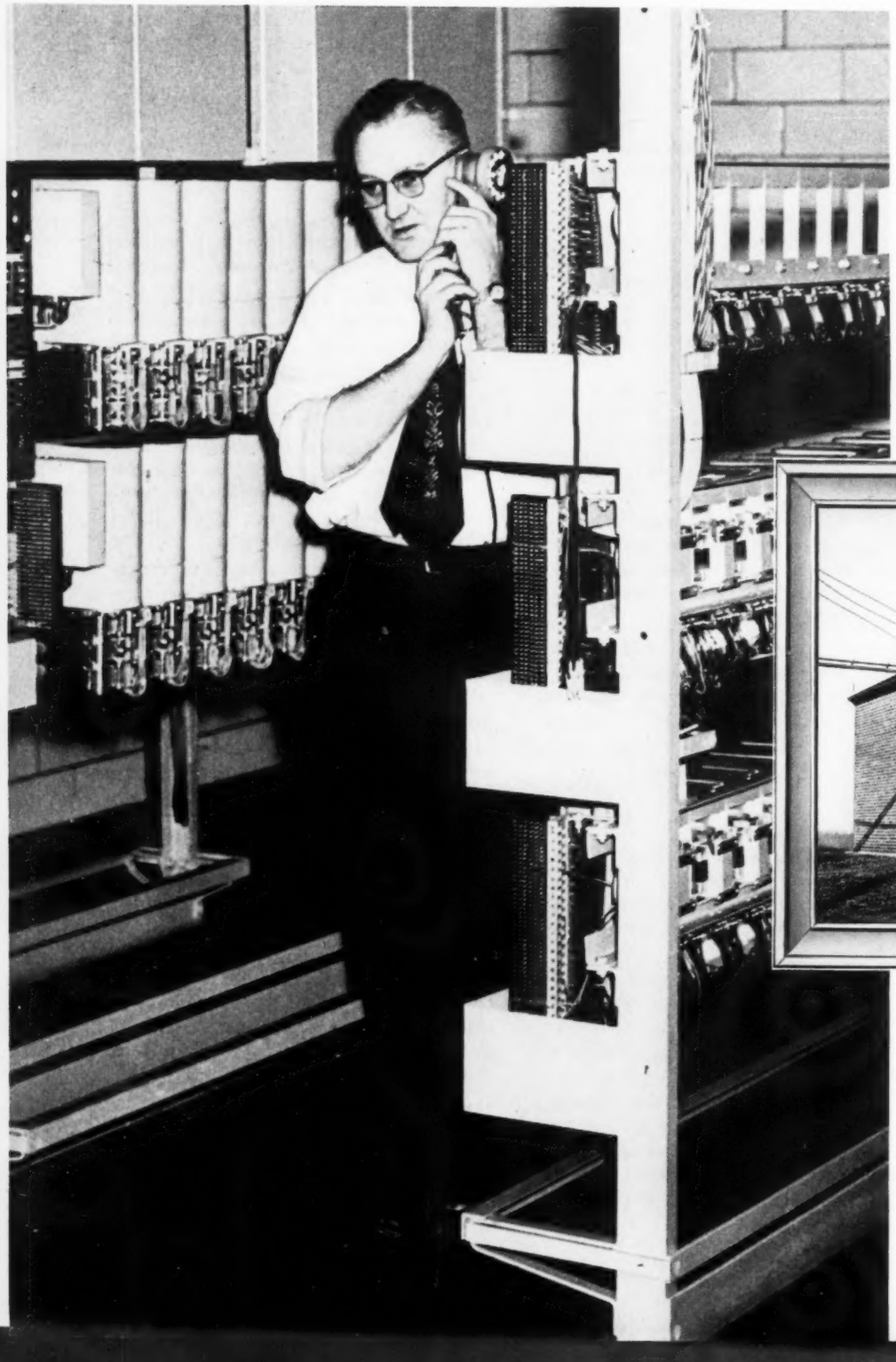
V V

It has been said that television has made a wonderful change in American conversation. There's less of it.



Dependable

STROWGER AUTOMATIC *serves through 3*



- **Upper Right:** Original 40-line St
  Automatic exchange at Nixon, Pennsy
- **Directly Above:** Exterior of new
  exchange.
- **Left:** Interior of new exchange. W. A
  Eqpt. Supt. for The People's Telepho
  pany of Butler, Penna., makes a routi

3*years* of growth!

At Nixon, Pennsylvania, a new Strowger Automatic exchange now replaces one which served dependably for *30 years.* The People's Telephone Company found that business had quadrupled during these years, and made the replacement only to provide more modern features—for the old equipment was still going strong!

Only Strowger Automatic can show such long records of actual service. And remember: *modern* Strowger Automatic is the result of Automatic's 60 years of Strowger switch development and constant search for new materials and processes. That's why the largest and most successful telephone companies use Strowger Automatic. They *know* it meets today's needs best—they *know* it will last for many thousands of tomorrows!

Most important to *you,* however, is the fact that when you buy Strowger Automatic, you know it will "deliver" on *your particular job;* the equipment you buy is tested in our factory under the same circuit conditions as exist in your exchange. Prepare for a secure and prosperous future. Write for a consultation with our engineers today.

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Maintenance Testing Equipment

By JOHN A. BRACKEN

PART 65. The preceding article in this series appeared in the Aug. 29 issue, page 32.

AMONG the various electronic devices employed to function as a relay in the operation of a telephone system, is the photoelectric cell. In general, the functions of the photoelectric cell can be divided into two groups: (a) starting and stopping operations of equipment, and (b) continuous operations of equipment by means of either the interception or impinging of a beam of light on the cell.

Essentially the photoelectric cell consists of a cathode (negative electrode) with a photosensitive surface, and an

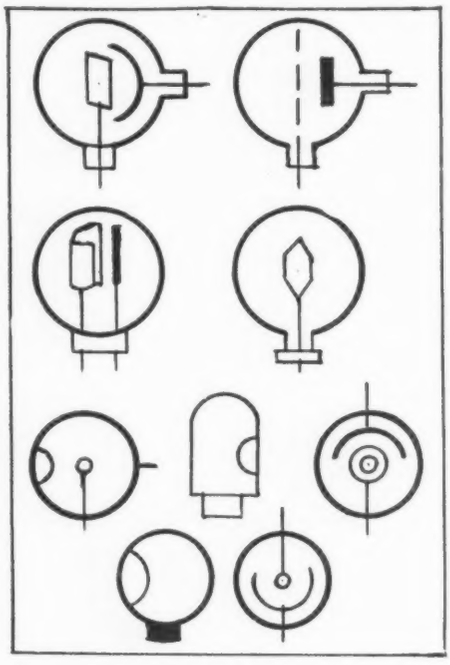


Fig. 1

anode (positive electrode) to collect the photoelectrons emitted by the cathode.

These photoelectric elements are inclosed in a tube containing either an inert gas, or simply a vacuum.

Photoelectric cells are made in many forms and of different materials, but all of them function in about the same way—by transforming light energy into electrical energy, and the more intense the light, the greater the effect.

Common symbols used to indicate a photoelectric cell are shown in *Fig. 1*.

According to scientific authority, the theory upon which the photoelectric cell works is as follows: When light falls upon certain specially prepared metals, they emit, or release electrons from their surfaces, the degree of which depends on (1) the frequency or wave length of the light rays, and (2) the kind, intensity and color of the light, which imparts to the released electrons sufficient energy to escape the boundaries of their atoms.

The released electrons and their subsequent passage through a conductor constitutes the photoelectric current. The current thus produced is directly proportional to the number of photoelectrons emitted from the photoelectric cell each second, the value of which is measured in microamperes.

As a source of electrical energy, the photoelectric cell is not important; it is the cell's ability to convert light energy into electrical energy that is really important, and which accounts for its extensive application in the operation of maintenance testing apparatus and other equipment.

The current output of a photoelectric cell may be increased by means of a power amplifier vacuum tube as shown in *Fig. 2*. Here a light L, a photoelectric cell P and associated power amplifier vacuum tube T, are arranged for operating an electromagnet type relay R. The amplifier tube consists of a plate, grid, cathode and filament (heater unit) as shown in *Fig. 3*.

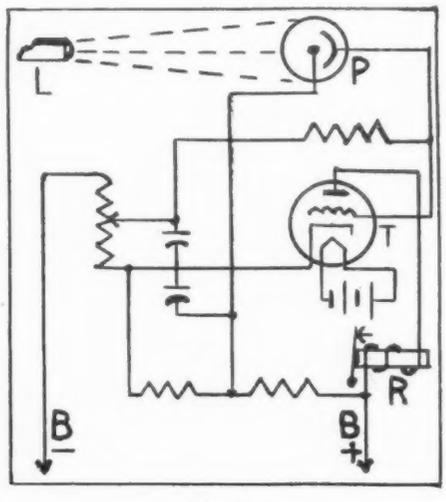


Fig. 2

Referring to *Fig. 2*, the photoelectric cell is located in the input circuit involving the grid. In the output or load circuit, called the plate circuit, is a high resistance relay, the resistance of which depends upon the specific characteristics of the amplifier tube used.

The amplifier tube grid is placed between the cathode and plate where it will emit a large number of electrons

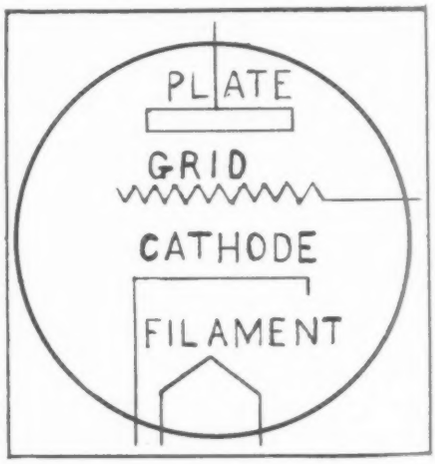


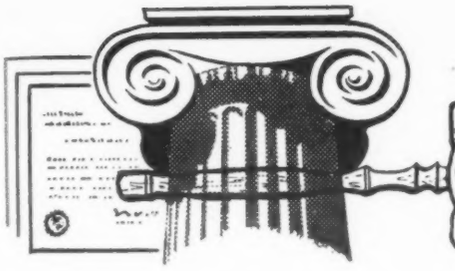
Fig. 3

when heated to the proper temperature by an electric current passing through the tube filament.

When the grid polarity is made positive with respect to the plate, the electrons will pass to the plate. In this way the grid controls the flow of electrons through the amplifier tube. Consequently, a small increase in the voltage or charge on the grid from the photoelectric cell is readily adaptable to causing a relatively large increase or decrease in the plate current; and the electromagnetic relay can be made to operate on either, depending on the type relay and its adjustment.

In *Fig. 2*, the operating current is supplied on the divided voltage basis from a common source as indicated at points B— and B+.

(To Be Continued)



Courts and Commissions

Indiana Independent Secures OK On $500,000 Preferred Issue

Issuance of 10,000 additional shares of $50 par value preferred stock by the Citizens Independent Telephone Co., Terre Haute, was authorized recently by the Indiana Public Service Commission.

Issuance of the stock will provide additional working capital for the expansion program begun in 1951, when the company was authorized to issue 12,500 shares of 5 per cent cumulative preferred stock.

V V

W. Va. Companies' Merger Approved by Commission

The West Virginia Public Service Commission on Aug. 22 approved the merger of two telephone companies (TELEPHONY, Aug. 1, p. 35).

The Duncan Telephone Co., Thomas, which had been serving Parsons, Thomas and Davis and the Berkeley Telephone Co. which had been serving the Arden and Mill Creek districts are the merged companies; henceforth, they will be known as the Duncan Telephone Co.

V V

Missouri Companies Seek Sale, Stock Issue Approval

Missouri Public Service Commission action recently was reported as follows:

On Aug. 25, the commission authorized the Potosi Telephone Co. to issue 1,920 shares of capital stock.

* * *

The commission on Aug. 28 was to have heard the application of the estate of John Lewis, deceased, by N. M. Brittain, administrator, and Bertha Lewis, doing business as The Dawn Telephone Co., to sell, and Green Hills Telephone Corp. to buy the Dawn company properties.

* * *

The commission set Sept. 22 as the date for hearing the application of the Twin Lakes Telephone Co. for authority to issue 1,000 shares of no par common stock and 500 shares of 6 per cent preferred stock of $100 par, and for a certificate of public convenience and necessity.

* * *

Also set for Sept. 22 is a hearing on the application of the Myers Telephone Co. for authority to issue 500 shares of no par capital stock and for a certificate of public convenience and necessity.

V V

Two N. D. Companies Win Rate Raises

Rate increases were approved on Aug. 21 by the North Dakota Public Service Commission for the Pioneer Telephone Co. of Red River Valley, Mayville, and for the Shepard Telephone Co., Walhalla.

The Pioneer company's new rates, effective upon conversion to dial, will be: One-party business, $7.50; two-party business, $6.50; rural multi-party business, $5.75; one-party residence, $4.50; four-party residence, $3.50, and rural 10-party residence, $5.00.

The Shepard company's new rates, effective on Sept. 1, are: One-party business, $5.00; one-party residence, $3.25; four-party residence, $3.00; 10-party rural residence, $4.00, and rural residence, over 10 parties, $3.50.

V V

S.W. Bell Takes Over Missouri Independent

The Ozark Central Telephone Co., St. Louis, Mo., was to have been taken over by Southwestern Bell Telephone Co. on Sept. 1.

The action follows a July 8 petition to the Federal Communications Commission for approval of a merger between the Ozark company and Southwestern Bell (TELEPHONY, July 25, p. 34).

V V

Asks O.K. to Operate in Mo.

The Missouri Public Service Commission on Aug. 27 received applications from Mary E. Miller for authority to own and operate the Everton Telephone Co. and the Ozark Telephone Company, Dadeville.

Comission O.K.'s Ga. Company's Dial Cutover, Purchase

The Georgia Public Service Commission on Aug. 25 authorized Pineland Telephone Cooperative, Inc., Swainsboro, to install dial equipment throughout its system.

The commission also authorized the company to purchase the Metter, Ga., exchange of the Southeastern Telephone Co., Tallahasse, Fla.

The commission approved the co-op's request that it be allowed to sell $16,275 worth of additional preferred stock, and authorized it to purchase first mortgage bonds totaling $489,000.

V V

Bell System Asks First Toll Rate Raise Since 1919

It was reported on Aug. 29 that the Bell System companies have filed with the Federal Communications Commission revised long distance rates which would increase by about 8 per cent the present 830-million-dollar annual revenues from interstate toll service.

No changes were proposed in the basic three-minute initial period daytime rates.

The companies proposed increases, however, in most of the initial three-minute period night and Sunday rates and in all overtime charges.

The rates filed will become effective Oct. 1 unless they are suspended by the FCC pending a hearing.

The revised rates filed call for increases of five cents in the charge for each one-minute overtime period on station-to-station and person-to-person interstate calls involving most distances above 24 miles. Increases of five to 10 cents in the initial three-minute period rates for night and Sunday calls involving most distances between 41 and 2,300 miles are provided.

The Bell System companies told the FCC that earnings from interstate services have been decreasing for the last several years and are now at a critically low level. The increased revenues and net earnings would help provide "prompt relief which is urgently needed," they said in justification of the rates.

Interstate operating results for the 12-month period ended June 30 this

year indicated a return of 4.83 per cent on claimed investment, the companies stated.

It was estimated that had the proposed new rates been in effect during that year, the return on net investment would have been about 1½ per cent more.

The American Telephone & Telegraph Co. said in a statement that "aside from a few minor up and down adjustments, this is the first increase in long distance telephone rates since 1919."

V V

South Dakota Co-op Wins New Rates

On Aug. 29 the South Dakota Public Utilities Commission approved the following rate schedule for the McCook Cooperative Telephone Co., Salem, for service at its Spencer, Canova, Winfred, and Center exchanges, effective upon conversion of each to dial:

One-party, business	$7.00
Two-party, business	6.50
Four-party, business	6.00
Multi-party, business	5.50
One-party, residence	4.25
Two-party, residence	3.75
Four-party, residence	3.25
Multi-party, residence	3.75
Mileage charge, per one-quarter mile:	
One-party	.70
Two-party	.40
Four-party	.25

V V

Buys Wisconsin Independent; Plans Expansion Program

The Hazel Green (Wis.) Telephone Co. has been sold to Raymond A. Godfriaux, Darlington, it was reported recently. He plans an expansion and improvement program which will affect approximately 200 subscribers.

For the past six years Mr. Godfriaux has been employed by the Wisconsin Telephone Co., most recently at Darlington.

V V

Illinois Telephone to Issue 20,000 Preferred Shares

It was reported on Aug. 25 that Illinois Telephone Co., Bloomington, a subsidiary of Telephone Bond & Share Co., Wilmington, Del., plans to pay off some construction costs by selling 20,000 shares (1 million dollars worth) of its $50 par preferred stock to the public.

The company will offer the securities through an underwriting group headed by Harris, Hall & Co., according to a registration statement filed with the Securities & Exchange Commission.

West Coast Company Offers Common Stock Issue

It was reported on Aug. 27 that 60,000 shares of common stock of the West Coast Telephone Co., Everett, Wash., are being offered at $30.75 a share by a group headed by Blyth & Co., Inc. (TELEPHONY, Aug. 8, p. 44).

Proceeds of the $1,845,000 financing will be used in the company's construction program.

V V

Ind. Bell Asks Court to Cancel Commission's Rate Cut Order

Indiana Bell Telephone Co. on Aug. 26 asked Marion County Circuit Court to set aside again an Indiana Public Service Commission rate reduction order (TELEPHONY, Aug. 29, p. 34).

The injunction plea was the company's answer to two formal demands by the commission that rates be cut $1,700,000 a year and that a 5-million-dollar refund be made.

In this latest legal move in the two-year-long battle between the commission and Circuit Judge Lloyd D. Claycombe over rate-making, the company accused the commission of presenting "confusing figures" in its orders.

Indiana Bell said in a statement issued following the Aug. 26 action that "any reduction in telephone rates is unjustified under present conditions."

Thus the controversial case—which the commission had claimed it "won" this summer in the Indiana Supreme Court—was back in the county court.

Judge Claycombe, by injunctions, in 1952 raised rates 7.2 million dollars a year after declaring those fixed earlier by the commission as "confiscatory."

This action, however, was held invalid judicial rate-making two months ago by the state's high court, which at the same time ordered the commission to establish rates.

This Aug. 6 the commission ordered Indiana Bell to reduce its rates 1.7 million dollars annually and make refunds approximating 8 million dollars for "excessive" charges made under the court-fixed rates.

Judge Claycombe soon set aside this commission order.

On Aug. 20 the commission issued another order that the company make the same rate cut, and a refund of about 5 million dollars.

V V

REA Economy Drive Under Way, Administrator Nelsen Says

REA Administrator Ancher Nelsen a few days ago announced that in the interest of efficiency and economy, cer-

(Please turn to page 31)

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tain REA activities are being discontinued, curtailed, or transferred to borrowers. A small reduction in force is being made at this time as a result of these actions, he said.

Forty-eight employes are expected to be affected by the reduction. Of this number, 37 will be separated and 11 will be reassigned to lower grade positions.

v v

Ohio Association Distributes Industry Booklet Through State

More and more Ohio Independent telephone companies are projecting their public relations program into the fields of education and business in Ohio.

Typical example of this trend is a consciousness of public relations "at home" as expressed in one of the Ohio Independent Telephone Association's fall projects.

At that time the group will distribute a booklet entitled "The Independent Telephone Industry in Ohio" to high school seniors.

Several Ohio companies have ordered enough copies to cover classes in business problems, vocations and economics. Others are distributing the booklet through local service clubs. The association itself has put copies in the hands of several thousand opinion-leaders in the state.

Ample copies are available to meet all needs. Ohio association members may order copies through the association at seven cents each.

v v

"A few weeks ago President Eisenhower discussed, at a press conference, certain cuts in defense expenditures he is recommending. He vividly described the philosophy that governs his thinking in these words: 'I have always . . . believed that there is a great logic in the conduct of military affairs. There is an equally great logic in economic affairs. If these two logical disciplines can be wedded, it is then possible to create a situation of maximum military strength within economic capacities.

'If, on the other hand, these two are allowed to proceed in disregard one for the other, you then create a situation either of doubtful military strength, or of such precarious economic strength that your military position is in constant jeopardy.'

"The President thus said, in effect, that a sound government economy is as important to our defense and survival as actual military power—and that reckless, unbridled spending can be as dangerous as a foreign foe. That is as refreshing and as important an attitude as we have seen in high places in government in many long year."—*Industrial News Review.*

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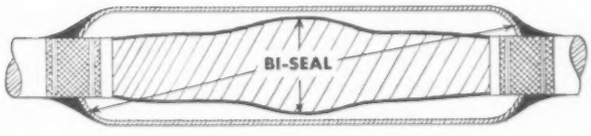

Plastic Cable to Plastic Cable.
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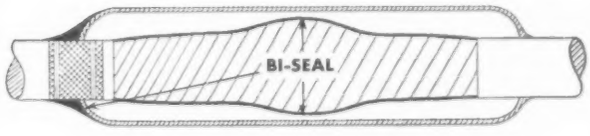

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ABC of the Telephone

(Concluded from page 15)

large groups of subscriber lines. The thought behind insurance routines is to give special treatment to these key units. If insurance routines are scheduled, it is well to keep their number to an absolute minimum. Actually, insurance routines are nothing more than a carry-over from the time when central office apparatus was rigorously gauged, cleaned, tested, and adjusted at regular intervals in an attempt to insure that all the units would be ready for service at any time.

A comparison of the insurance method of scheduling routines with the newer as required method shows that routine work on equipment where it is not needed usually causes more trouble than it prevents. The secret of the situation appears to be to let the equipment operate; clear the cases of trouble as they occur, maintain accurate records, and apply preventive maintenance routines as required. Even in this instance, as mentioned previously, the as required routine is usually specific in nature. This procedure serves to reduce the amount of activity in and around the apparatus.

Cleaning Routine

Cleaning routines are an important part of the maintenance program in the central office. One of the most important items to consider is what to clean and what not to clean. Basically, cleaning is performed to make a central office area safer and to prevent equipment trouble. Looks of the area, from the standpoint of removing every trace of dust from each relay can cover, is of minor importance.

Dust that has already come to rest on the equipment will not cause trouble unless it is dislodged. Pressure blowing is one of the accepted ways of removing dust from the equipment. As discussed previously, pressure blowing can be scheduled on an as required basis. As a result, there is little need for a periodic schedule of frame cleaning or dusting.

Cleaning routines should be set up to remove and eliminate dust and dirt to prevent it from lodging on the equipment frames. Generally accepted routines specify that the equipment room aisles that are subjected to heavy traffic should be swept daily with a floor brush covered with a damp cloth. Other aisles should be cleaned in the same manner on a weekly basis. It is well to mop entrance halls daily because this will stop a large amount of dust at the point where it enters the building.

Regular waxing of the floor is beneficial. Waxed surfaces are easier to clean and the floor covering is given better protection. Also, a waxed floor is cleaner after the damp mopping previously described.

In summarizing the scheduling of preventive maintenance routines, it is well to mention that these routines are, perhaps, the backbone of the central office maintenance job. The scheduling of the various routine operations should be planned to secure the greatest return for the time and material expended on the various jobs.

On the basis of present information about central office maintenance results, it appears that a schedule of periodic routine as outlined should be the only fixed part of the program. It is believed that all of the operating equipment can be maintained most effectively and efficiently by scheduling routines on an as required basis. If automatic test frames are available, continuous routines can be set up to augment the effectiveness of the periodic and as required schedules.

(To Be Continued)

Shown operating the Military Air Transport Service, Atlantic division, Westover (Mass.) base exchange are, left to right, Mrs. MAE COSTELLO, civilian chief operator; A/2C VELMA JONES; A/2C TINY ECKLIN; T/Sgt. PHYLLIS STEWART, military chief operator, and Mrs. HELEN BRESNAHAN. The exchange is handled by eight civilian and 14 military operators. Base personnel make and receive over the 1,000 telephones between 11,000 and 12,000 calls a day.

V V

Ohio Independent Buys Two Companies

William McCluskey, owner of the Citizens Telephone Co., Rock Creek, O., recently purchased the Bloomingdale and Hopedale Telephone Cos.

Mr. McCluskey has established residence at Hopedale. He plans to have one son, James, now in Korea, manage the Bloomingdale company; a second son, Thomas, manage the Hopedale company, and a third son, Richard, supervise the Citizens company.

The McCluskeys plan to convert both Bloomingdale and Hopedale to dial operation.

V V

Begin Use of Nation's Largest Private Telephone System

The largest private telephone system in the United States went into service on Sept. 1 at the J. L. Hudson Co. department store in Detroit, Mich., according to the Michigan Bell Telephone Co.

Only the federal government's system in the Pentagon building is larger than Hudson's.

The inauguration of the new system was observed by Oscar Webber, Hudson company president and a Michigan Bell director, and William M. Day, Michigan Bell vice president and general manager.

The new system utilizes 40 operators on the main switchboard which is backed by a telephone order board staffed by 196 operators. The order board receives customers' orders for merchandise after they have been channeled through the main board.

Engineered to handle 40,000 incoming calls a day, the system includes 2,000 telephones throughout the store and warehouses. There are 330 incoming lines and 178 outgoing.

Three years of planning and construction plus a year of installation went into the huge project.

Radio Links U. S. and Canada

(Continued from page 17)

only a matter of insuring a proper line of sight path between the respective radio operating points at those two localities. At Port Angeles the radio and carrier equipment was located in the central office and at Victoria the radio equipment was placed on the roof of the Bank of Toronto Building and the carrier equipment in the toll central office, one block away.

The selection of the Seattle-Port Angeles route was a Pacific company problem. Extensive office work was carried out plotting paths on topographical maps and drawing profiles on earth curvature paper. The topography was such that a two-link path from our Seattle east office gave about as good clearances, although somewhat longer links than a path using two repeaters.

The possible repeater sites were next visited and estimates made of the cost of building roads, and extending power and telephone lines to the sites. The single repeater site on Mt. Blyn was found to be the best as regards access since it was on state forest lands having a fire lookout tower reached by an existing road.

The next step was to verify the clearances in the Seattle-Blyn and Blyn-Port Angeles paths by light tests. These tests were made, using 300-watt sealed lights and using a small gas engine generator at Blyn where power was not available. The results of these tests determined the location and height of the towers at the three points.

At Seattle, the antenna is supported on the existing steel platform on which are located the antennas of the Seattle-Portland Western Electric Co. microwave system. At Mt. Blyn a triangular pole structure, 70 feet high, supports the antennas in both directions. At Port Angeles a 70-foot, self-supporting steel tower was erected on the roof of the central office to support the antenna toward Victoria as well as toward Blyn.

Having chosen our repeater site, the next problem was to secure land and access rights for the site. The right to use a two-acre tract was secured from the state forest board and the right to use the road, where on state land, was also secured on basis of our sharing in its maintenance. It was also necessary to secure easements for use of the road from private property owners where the road crossed their lands. An easement for a joint power and telephone line which did not follow the road was also secured from the forest owners and compensation made for trees cut down to clear a right-of-way. Some work was done on the road to stand the heavy hauling during construction period.

It was necessary to have a fireproof installation at Mt. Blyn. Accordingly, a 20-foot by 30-foot steel frame building with corrugated galvanized steel sides and roof, was constructed on a concrete foundation. The building is divided into three rooms for equipment, furnace and emergency power plant. The interior finish is plaster board and the whole building is insulated with 4 inches of rock wool. The site, which is at 2,000 feet elevation, is subject to 6 feet of snow and zero temperature in the winter so that the equipment must be designed to provide for power failure and possible delay in maintenance forces reaching the building. A four-wheel-drive jeep is provided for maintenance forces to use during winter weather.

The radio equipment includes regular and standby transmitter and receiver units at all points. There are 16 channels in the Victoria-Port Angeles section and 20 channels in the Port Angeles-Seattle section, with eight circuits being repeatered at Port

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Angeles. This provides eight direct Seattle-Victoria radio circuits and eight circuits which are composed of radio in the Victoria-Port Angeles section and open wire carrier in the Port Angeles-Seattle section. In addition, it provides 12 Seattle-Port Angeles radio circuits to supplement the existing open wire carrier circuits between those two points. All circuits are used for telephone traffic.

We now have a total of 16 circuits in the Seattle-Victoria radio link. The forecast for this group is 32 circuits by 1965. The FM radio system with frequency division multiplexing equipment seems particularly well adapted to this route as it can be expanded to 24 circuits. Beyond that point a paralleling system could be installed or the existing system may be modified to use wider base band equipment, thus affording more circuits.

The Seattle-Mt. Blyn path is 41 miles long, partly over land and partly over water. The Blyn-Port Angeles path is 22 miles long and entirely over land. The Port Angeles-Victoria path is 22 miles and entirely over water. The antennas on the Seattle-Port Angeles system are parabolic reflectors with single 10-foot antennas at both ends of the Seattle-Blyn link and single 6-foot antennas on the Blyn-Port Angeles link. At Port Angeles, two double six-element yagi antennas are used toward Victoria and at Victoria two six-foot antennas were used. The 900-mc equipment uses diplexing equipment to allow transmitting and receiving from one antenna.

The Victoria, Port Angeles and Seattle terminals are attended, but Blyn is operated on an unattended basis.

In addition to the traffic circuits mentioned, there is one service channel which is accessible for use of maintenance men at Seattle, Blyn, Port Angeles and Victoria. At Blyn, exchange service from Sequim is also available for communication in case the radio is out in both directions. The alarm and control circuits are also on the radio from Seattle to Mt. Blyn.

The power line serving the Blyn repeater is single phase 12.5 KV. The emergency power plant consists of a fully automatic gas engine generator single phase 230V 8 KW.

The equipment was ordered in November, 1952, and was received during April and May, 1953. Installations were started in May and were completed in June. The circuits were tested and any equipment troubles were corrected during June and July. The circuits were cut into regular service during the last two weeks of July.

The submarine cable being replaced by the radio is failing, as predicted, and when discontinued there were only two good pairs left out of six.

V V

General of California Announces Executive Changes

Edwin M. Blakeslee, president of the General Telephone Co. of California, recently announced numerous changes in top executive positions of the company. The organizational changes, all already completed, were authorized in a recent meeting of the board of directors at the company's headquarters in Santa Monica.

Harlan W. Holmwood, the company's vice president, was named executive vice president. Employed in 1928 by the Santa Monica Bay Telephone Co., a General Telephone predecessor, Mr. Holmwood served in various capacities, becoming secretary and treasurer in 1936. He was called to active duty in 1942, serving in the Army Air Forces as a major during World War II. Returning to the company in 1944, he was elected vice president and member of the board of directors in July the same year.

Dean M. Barnes, vice president and chief engineer, became operating vice president. Mr. Barnes has been with the company since 1922 and has held numerous positions in plant and engineering. He was appointed chief engineer in 1942 and then elected vice president and chief engineer in 1949.

R. K. Chase, secretary and treasurer of the company, was named vice president and treasurer. He started with the company in 1941 as assistant secretary and assistant treasurer and was elevated to secretary and treasurer in 1943. Previous to joining General of California, Mr. Chase was with a large public accounting firm.

Marshall K. Taylor, attorney and personnel manager, became secretary. Mr. Taylor started with the company in 1942 as the company attorney. In 1947 he assumed the duties of personnel manager in addition to the attorney work.

G. T. Ellis, general auditor since 1929, became controller. He was an accountant with the Wisconsin Railroad Commission prior to joining the company as auditor.

V V

"People who are for a more economic government must be heard above those who are asking special consideration. There cannot be any genuine economy without a lot of groups and a lot of individuals having to make a small sacrifice in the national interest." —Milbank, S. D., *Herald Advance*.

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When Officials Turn Into Professors

(Continued from page 19)

stressed the small units in which a telephone company deals, the average six-cent call, and told the students that they could always spot a comptroller by his being past middle age, with a lean figure and wrinkles, cold, intelligent, impassive bearing, codfish eyes . . .

Then a faculty professor, Leonard Doyle, who teaches accounting, took charge of questions, and the guest lecturer told the class how he prepared recommendations for the coming year's finances, prepared depreciation statements for the regulatory commission, why Pacific Telephone uses monthly estimates of money rather than a yearly budget, and so forth.

In early life, George Bernard Shaw was a socialistic soapboxer, and he said that it was not easy for him to get started on a talk until somebody in the audience yelled, "Yah!"

While Campbell was answering questions he paused and said, "Before I answer that one, I notice everybody else is smoking—am I permitted to?"

So he lighted a fag, and that seems to be about all there is to stage fright.

These guest professors were skillfully supported by faculty members, who put them at ease before students. Dr. Jastram had a faculty chairman on the platform with each speaker, a teacher in the same technical field. The lectures, with questions, lasted an hour and a half, and were delivered weekly, to a class numbering around 200 students. Mark Sullivan opened the course, and closed it with a summing up for the last lecture.

Student questions were one of the most interesting features for the utility men. There was nothing antagonistic, personal or embarrassing.

"How about wages?" was one query that came up several times. "You are a regulated business. When employes demand increased wages, why not grant their demands, and then go to the utility commission and get a rate increase to match?"

Certainly that would simplify things! This feeling that a regulated utility could always ask for more, like Oliver Twist, appeared to be held by students, as it is by many citizens. An answer was deserved, and took shape as follows:

"Utility commissions are conservative about granting rate increases, but let

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us assume we could do that—how much of a wage increase would you think fair? Would you grant as much as 60 per cent?"

"Oh, no! That would be unreasonable."

Whittling it down to 50, 40, 20 per cent, it was conceded that a 5 per cent boost would be about right! So undoubtedly these business administration students are on their way toward the real world of business.

"Why have you come here?" was asked more than one of the guest professors. "Because we were invited," they answered, which took out any suspicion of hidden motives.

University and utility men get along well with a little shoulder rubbing. There may be some academic awe in meeting executives who direct large affairs, and the latter may feel deficient in formal knowledge in the presence of professors. But nowadays many college professors teach business subjects, and are keen about business contacts, so there is a common lingo.

As a guide to behavior on the campus, professors prefer to be called "Mister." The best usage is, not "Professor Smith," but "Mr. Smith, professor of ——." This Emily Post-ism arises from so many misters loving to be called "Professor."

And also, when in ivied halls, it is not good form to ask, "Is there a doctor in the house?"

College students take a little understanding, too. Their questions are sometimes involved, so that the faculty chairman relays them to the guest lecturers. They may get off the target—these lectures dealt with management problems and how executives meet them.

A student asked, "Mr. Sullivan, in the interests of free enterprise — so much of our business is regulated—do you think private enterprise is now sufficiently sophisticated so it could meet business problems realistically without government regulation?"

Sullivan replied that, while some regulation is necessary, he believed private business was stronger for being as little regulated as possible.

The student might be compared to the boy whose voice is changing, having reached another awkward age in which he is not fully able to express himself. He knows a good deal more than appears on the surface. College is not being wasted on him. He is a better embryo business manager than his questions indicate. He is your own kid, probably. He is the generation presently taking over—briefly, the student is all right, and the guest lecturers liked him, and learned a lot from him.

And students paid tribute to the guest lecturers when they said, "What we like about you is, that you have told us the truth. Whenever you have been asked to explain anything, you have given us facts, without any of the bias that might enter into a regulated business."

At the end of the course a young woman senior, Elizabeth G. Rhoades, wrote her impressions, in part:

After spending almost four years majoring in business administration, all the case material and theories expounded in the classroom came alive through these lectures. This was a genuine and rare opportunity to learn from the top executives of a leading corporation how an industry ticks.

I learned about the problems of industry as a whole—small and large—and how industry fits into our society. The lectures vividly portrayed how the dynamics of our economy are such that the problems of men, material, money, survival, and progress are ever present, ever changing, and never completely solved.

I must confess that I have never met a top-ranking executive of a corporation before, and had a vague impression of men of godlike stature, dispensing wisdom and direction from Olympian heights. Never was I in more error. These men are intelligent. They are also human. All possess a zest and vigor for living and working, and have a sense of fun and excitement about them.

The lectures were stimulating, informative, and invaluable to me as a student, and a better-informed citizen. This is largely due to the intellectual honesty and integrity of the lecturers. The questions asked by students were direct, probing, varied, and sometimes blunt and tactless. All were answered in detail, with a forthright and frank graciousness. Always, I felt, an attempt was made to present the company's story in an impartial and objective manner. No doubt this was a difficult thing to do, because of the natural enthusiasm and pride in the company, but a very conscious effort was made.

These men performed a real service to the students of the school of business administration, as symbols of the best of the business administration profession.

What does a company get out of such a project? What are the tangible results that can be pointed out as justifying all the work and time needed to stage such a lecture course—and the most expensive time and work in the organization?

The results are tangible, and surprising.

The most obvious return might be thought to be publicity. The lectures embodied much information of news interest.

But publicity was not sought. It was in fact soft-pedaled. No news releases were given out during the course, and

only infrequent news reports appeared, generally on financial pages.

The fellows in Pacific Telephone's information and public relations departments are most appreciative of the tangible results. For after having been disregarded in the preparation of the lectures, they admired the top brass texts, and immediately put them to work.

"Our job is getting information from these executives," say the relations fellows. "It isn't always easy. They do not have the time, or perhaps the facility to tell us about things we want to know.

"But in these lectures they developed information that would have taken us years to obtain. College lecturing opens up for us a new way of reporting company affairs."

The lectures have been put to work in Pacific Telephone's supervisory circles, are being read and discussed at meetings, and give to supervisors the same insight into policies and problems as were given to students.

It may well be that the greatest return will come in long-range public relations.

A lot of work and time were put into lectures for a couple hundred students. But these students will presently be occupying executive positions in many industries and communities. They will be forming public opinion. They will have firsthand knowledge of the company whose top brass contributed to their education.

"They say that a stone dropped into a pool sets up circles that widen forever," is the way one observer put it. "Pacific Telephone dropped a couple of hundred stones into that many important pools. Nobody can tell when the circles of public understanding will come to an end."

V V

Vail Medal Awarded Alabama Man for Rescue in Well

It was reported on Aug. 21 that John T. Coleman, an installer-repairman for Southern Bell Telephone & Telegraph Co. at Anniston, Ala., recently received the Bronze Vail Medal award. It was presented by J. G. Bradbury, a Southern Bell vice president. The medal is awarded to telephone men and women for heroic and courageous acts.

Mr. Coleman was cited by the company for "courageous service beyond the normal call of duty, in which there was considerable personal risk involved."

In July, 1952, while Mr. Coleman was working in the mayor's office, word came that an elderly woman had fallen into an abandoned well a short distance away.

He rushed to the scene and learned that Mrs. Emma Camp had fallen into a 25-foot well, which contained about 10 feet of water. She had been clinging to the side of the well for quite some time and was almost exhausted.

The installer tied a length of garden hose to a nearby tree and lowered himself into the well, found a foothold beneath the water level and was able to support Mrs. Camp until she could be raised from the well by rope.

Having been trained for similar emergencies, Mr. Coleman then administered first aid to Mrs. Camp until an ambulance arrived.

Railroad Association to Hold 30th Communications Session

The communications section of the Association of American Railroads will hold its 30th annual session at The Plaza Hotel, San Antonio, Tex., on Oct. 20, 21 and 22. Registration will be from 1 to 5 p.m. on Oct. 19 and prior to the opening session on Oct. 20.

C. O. Ellis, general superintendent of communications, Chicago, Rock Island & Pacific Railroad, is chairman of the section and will preside at the session. He has been an active member of the section since 1927 and has served as

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chairman and member of various committees.

Invitations have been extended to D. V. Fraser, president of the Missouri-Kansas-Texas Railroad; D. J. Russell, president of the Southern Pacific Co. and P. J. Neff, chief executive officer, Missouri Pacific Railroad. It is expected that the association's operations and maintenance department's vice president will attend and address the section.

Advance interest in the session's program and features indicates a record attendance. Evidence of the increased interest in the development and expansion of railroad communications is the attendance at annual sessions for the past five years, each of which has successfully set a new record, exceeding each previous year by over 10 per cent. The eight standing committees and four subcommittees will submit reports on 59 items for consideration and full opportunity will be provided the membership to discuss these various items. These reports will cover the most recent developments in the many phases of railroad communications.

V V

OBITUARY

WILLIAM CHARLES AVERY, 73, chairman of the board and former president of Hawaii's Mutual Telephone Co., died in Honolulu on Aug. 22 after a five-month illness.

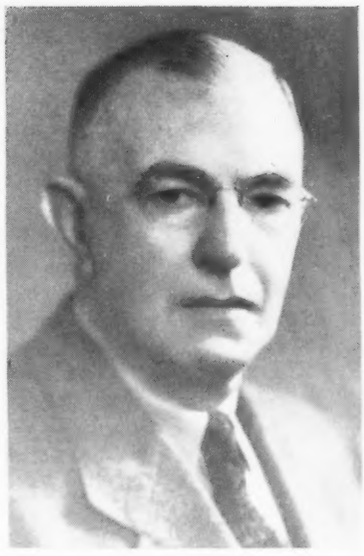
Born in LeRoy, N. Y., Mr. Avery was a graduate of Boston University. He joined the Mutual company in 1921, and thereafter revised the company's accounting system to conform with the standards then set up by the Interstate Commerce Commission. He also made preliminary studies and set up the company's employe retirement system, inaugurated in 1931.

In 1923 he was appointed assistant treasurer, and became treasurer and director in 1925. From 1937 to July, 1944, he served as secretary-treasurer, and thereafter was appointed vice president and general manager.

In October, 1944, he was elected president, in which capacity he organized and coordinated Mutual's extensive post-war expansion program. In the period from 1942 to 1951, Mutual doubled its number of stations in service—from 50,000 to 100,000.

From 1950 until his recent illness, Mr. Avery served as chairman of the board of directors. In this capacity he continued to keep in close touch with the affairs of the company, spending a good deal of time compiling a history of Mutual Telephone Co.

Mr. Avery was always keenly interested in training and developing personnel for more responsible jobs. Many of Mutual's key people today can look back to the early training and personal encouragement they received under his guidance.



W. C. AVERY

He is survived by his widow, Margaret, and two sons, William C. of Los Angeles, and Donald M. of Honolulu.

V V

Georgia Company Makes Use of Envelopes in Public Relations

As part of the public relations program of the Standard Telephone Co., Cornelia, Ga., H. M. Stewart, company president, reports the following are used as notes (usually boxed) in the lower left corner of business envelopes:

"For better service call by number."

* * *

"Please drive carefully—we can't afford to lose you as a customer."

* * *

"Serving northeast Georgia where living is a pleasant experience."

* * *

"We serve the finest people, in the best towns, in the finest state, in the best country, in the world."

* * *

"We serve: Piedmont College, North Georgia College, North Georgia Trade & Vocational School, Truett-McConnell College and Young Harris College."

V V

Rodormer Leaves Hospital

George Rodormer, veteran executive of the Reliable Electric Co. and prominent figure in the Independent telephone industry, has been moved to the Broad Nursing Home, 1840 Asbury St., Evanston, Ill., following a prolonged illness and confinement in an Evanston hospital.

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Telephones in United States Total Almost 50 Million

It was reported on Aug. 27 that the number of telephones in the United States is near the 50-million mark.

The American Telephone & Telegraph Co. on that date reported 49¼ million telephones in use as of June 30. Of these, AT&T's Bell System subsidiaries operated 40,384,000, with the remainder being operated by 5,234 Independent companies.

The national total compares with 48,056,308 at the start of the year and 45,636,437 at the beginning of 1952.

If the same rate of gain continues, the total should pass 50 million in October.

The chief statistician's division of AT&T reported Americans averaged 188 million telephone conversations a day in the second quarter of the year.

The 49¼ million telephones in this country represents well over half the world total of approximately 80 million, with 30 telephones for every 100 Americans.

Great Britain is second in total telephones with nearly 6 million and Canada third with more than 3 million.

But Sweden is second in telephones per capita with more than 25 per 100 population, and Canada third with more than 22 per 100.

V V

Ohio Association, Commission Hold Two Education Seminars

The Ohio Independent Telephone Association recently announced plans to conduct two educational seminars on Independent telephony in Ohio at the State Office building, Columbus, one on Aug. 19 and another on Sept. 16.

The seminars were arranged following an invitation by the Ohio Public Utilities Commission. It was expected that virtually the entire commission staff would attend. At each session five major subjects were to be presented by competent association members.

These meetings are basic in the association's 1953 public relations program. Factual information about the industry is shared with more than 100 persons vitally associated with it.

Subjects and participants for the Aug. 19 meeting were: "History of Independent Telephone Movement" (Gustav Hirsch); "Ohio Independent Telephone Association" (Daniel W. DeHayes); "Financing—Early-day and Present Problems" (Henry Hoppe); "Planning and Construction of Outside Plant" (Robert Wopat), and "Planning and Installation of Central Office Equipment" (R. E. Daniel, William T. Reichel and Marvin Byrd).

Sept. 16 discussions will include: "Traffic" (R. E. Coffman); "Commercial" (E. F. Woodward and aides); "Accounting" (Edward Ward); "Maintenance of Central Office Equipment and Outside Plant" (Weldon W. Case and aides) and the summation talk, "Industry's Progress and Plans" by Col. William C. Henry.

All members of the Ohio Independent industry have been invited to attend these meetings.

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REA Administrator ANCHER NELSEN (center) shown with ROY G. ZOOK (left), acting assistant administrator, electric, and J. K. O'SHAUGHNESSY, acting assistant administrator, telephone.

Two New Acting Assistant REA Administrators Appointed

REA Administrator Ancher Nelsen on Aug. 25 appointed two new acting assistant administrators.

They are J. K. O'Shaughnessy, who will direct and coordinate activities of the telephone program, and Roy G. Zook, who will assume similar responsibilities in the electric program. Ray-

R. W. LYNN

mond W. Lynn was appointed acting chief of the Telephone Engineering Division, succeeding Mr. O'Shaughnessy.

Mr. Shaughnessy joined REA in October, 1937. Prior to his governmental appointment, he spent several years in private utility work throughout the South and in Mexico. He also was on the staff of American Telephone & Telegraph Co., doing engineering and operational work, and later maintained private offices in Washington and Maryland as an engineering consultant.

He was assistant chief of the REA Design & Construction Division from June, 1939, to January, 1946, when he became chief of the Engineering Division. In June, 1953, he became chief of Telephone Engineering Division.

Mr. Zook arrives at his new post after serving about 14 months as director of REA's western area, with responsibility for electric distribution borrowers in California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, Oregon, Utah, Washington, Wyoming, Alaska and Hawaii.

He joined REA in June, 1938, as a field construction engineer. After serving in Washington and in the field in North Carolina and Mississippi, he became regional construction engineer in 1946 and a regional section head in 1948. He served in the Army from 1941 to 1946, and was discharged with the rank of lieutenant-colonel.

Raymond W. Lynn, new acting chief of the Telephone Engineering Division, became assistant head of that division in July, 1953. Prior to that he had served as assistant chief of the Engineering Division for 3½ years and as regional construction engineer for Missouri, Arkansas, Oklahoma, and Louisiana. He joined the REA staff in June, 1936, as assistant engineering aide.

V V

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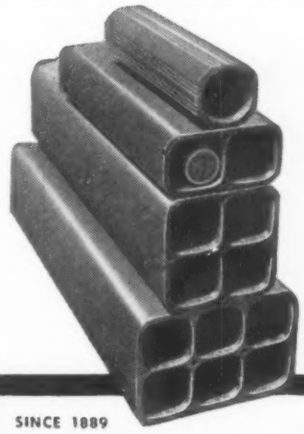

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6 Millionth Telephone Installed On Pacific Coast

Legislative, industrial, and telephone industry business leaders of the state and community met in the desert city of Barstow, Cal., to participate in ceremonies marking an historic communications achievement—installation of the 6,000,000th telephone on the Pacific Coast.

The historic telephone was installed in the home of a Marine veteran of the Korean War — Master Sergeant and Mrs. Lionel P. Williams of Barstow.

The installation followed a luncheon ceremony during which U. S. Congressman Harry R. Sheppard, United States Representative for the 27th Congressional District (San Bernardino County) and dean of California's U. S. legislators, presented the telephone to the marine and his attractive young wife.

It was a specially manufactured blue telephone outfitted with a plaque identifying it as the 6,000,000th telephone to be installed in the nation's fastest growing region—the Pacific Coast area which includes California, Washington, Oregon, Nevada and part of Idaho.

Honor of installing the significant piece of communications equipment on its system went to the Interstate Telegraph Co., a subsidiary of the California Electric Power Co., which provides telephone service to Barstow and other communities and cities in California and Nevada.

Interstate is the third largest Independent telephone company in California and one of the 200 telephone companies which serve the Pacific Coast area and which met the phenomenal postwar demands for increased communications facilities by almost doubling the number of telephones in service since the end of World War II.

Congressman Sheppard and Albert Cage, president of California Electric Power Co. and Interstate Telegraph Co., were the keynote speakers at the presentation luncheon.

The congressman, chairman of the House west coast delegation which includes the states comprising the Pacific Coast area, praised the accomplishments of the coast's telephone companies "which have helped to make possible the tremendous expansion of the West." Congressman Sheppard said that the 6,000,000th telephone was a symbol—"a symbol of American inventiveness and know-how; a great communications milestone for our area and the entire nation." He then presented Mr. Williams with the telephone.

Mr. Cage praised the work of Interstate and the coast's 199 other telephone companies during the postwar period, noting that "progress is not yet finished nor is the end in sight."

"The growth of Barstow and the great growth of the dynamic West have made it necessary for California Electric Power Co. to undertake the difficult task of procuring tremendous sums of money from people who were willing to invest their savings in this parent company and its associated company, Interstate Telegraph Co. With the money we have obtained, we have built new buildings and we are buying the best and latest equipment for Interstate," Mr. Cage said.

Willard G. Wade, vice president and general manager of Interstate, was master-of-ceremonies and outlined for the assembled guests the history of the company and a growth which has seen its total investment increase more than 290 per cent since 1945.

V V

Executives' Home Study Course In Speed Reading Announced

Executives who are unable to complete their reading, and who live too far from an established reading improvement center, can now speed up reading ability through home study.

So says Speed Reading Institute, Inc., a New York company of reading consultants, who have announced the release of a correspondence course in speed reading.

Originally used to expedite the reading of executive groups in the main-offices of General Foods, American Telephone & Telegraph Co., McCormick & Co., and other organizations, the course has been packaged for home study to train executives in far-flung company outposts.

The 10-session course, which has been licensed by the New York State Department of Education, does not rely on any mechanical equipment. Improvement for the first few executives who completed the course averaged around 85 per cent above starting speeds.

The institute reports that one correspondent, an executive in Sydney, Australia, had to secure an import license from the Australian custom officials before he could export the necessary dollars out of the country. The Australian, who presented a voluminous brief of his need for greater reading speed, was so persuasive that he received the license within a week.

V V

"It has never been more essential that we unite in a common purpose and that we assume the responsibility of being well informed and of making our views and ideas articulate."—LAURENCE F. LEE, ***board chairman, Chamber of Commerce of the United States.***

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Foreign News

Mexico's Ministry of Communications & Public Works recently announced that Telefonos de Mexico, S.A., the country's major private telephone company, has completed installation of 15,000 telephones and repairing of 6,500 others in Mexico's federal district. The area includes Mexico City and has a population of slightly more than 3.5 million.

The company, whose expansion and improvement program was approved by the ministry, plans to install at least 27,000 telephones in the district next year.

In Monterrey, Telefonos is converting 9,000 telephones to dial. This city, capital of Nuevo Leon, is an industrial center on the eastern Texas border.

The company is investing 103 million pesos (11.9 million dollars) in these improvements.

But, the ministry said, despite Telefonos' great efforts and expenditures in this direction, the company is confronted with many obstacles to provision of really adequate service. This is due to a great increase in the population of Mexico's large cities, and particularly in the federal district. The stepping up of industrial and commercial activities has also affected the company's program.

However, during the past three years Telefonos has filled 84,098 of the 149,653 filed applications for service.

Radio stations in Mexico City, in order to reduce telephone traffic, are campaigning to dissuade the public from using telephones for trivial reasons.

"Our telephone network is a vital organ for the service and progress of a country in full development. Therefore, please use the telephone only when you have urgent necessity to do so," campaigners advise.

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500 U.S. Aircraft Generators, 01, P.1. Amplidyne 5AM31N118A.
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